

REMARKS

Claims 1 to 30 are pending in this application, of which claims 1, 11 and 21 are the independent claims. Favorable reconsideration and further examination are respectfully requested.

Claims 1 to 30 were rejected as being obvious over Zwern (U.S. Patent No. 6,084,556) in view of Miller (U.S. Patent No. 6,229,542). As shown above, Applicant has amended the claims to define the invention more clearly. In view of these amendments, withdrawal of the art rejection is respectfully requested.

Claim 1, as amended, is directed to a method of rendering a virtual three-dimensional (3D) scene. The method includes tracking a positional change of a head of a user with respect to a display, transforming the virtual 3D scene in accordance with the positional change of the head, and rendering on the display a transformed virtual 3D scene. The virtual 3D scene is rendered in a perspective projection defined by a frustum bounded by a near plane and by a far plane located opposite the near plane. Transforming includes shifting the virtual 3D scene in a first direction of the user when the head moves from the first direction.

The applied art is not understood to disclose or suggest the foregoing features of claim 1. In particular, neither Zwern nor Miller disclose or suggest that transforming includes shifting the virtual 3D scene in a first direction of the user when the head moves from the first direction.

Zwern describes a virtual imaging system that utilizes a head-mounted display 26 to generate a virtual display. The head-mounted display 26 includes small LCDs that are located in close proximity to the wearer's eyes to generate the virtual display. Zwern states that "(a)s a user

looks to the right, the portion of the virtual image being seen by the user is to the right of the portion of the virtual image previously being seen by the user.” (see column 6, lines 64 to 67 of Zwern). Zwern also states that “the user can rotate her head left, right, up, and down to visually scan across the page in corresponding directions” (see column 7, lines 6 to 9). Thus conversely to the invention of claim 1, in Zwern, the virtual image is shifted in correspondence with a head of the user. In claim 1, on the other hand, the virtual 3D system is shifted in a first direction when the user's head moves *from* the first direction.

Applicant respectfully disagrees with the Examiner's assertion that it would have been obvious to alter Zwern's system to have the virtual 3D display move in the opposite direction of the head movement. That is, Zwern explicitly teaches away from Applicant's invention when Zwern states that the overall impression of his system “is analogous to a normally sighted person scanning across a newspaper” (see column 7, lines 8 to 9 of Zwern). Applicant's invention “looks and feels like user 16 is looking out a real-life window” (see page 2 of Applicant's specification) not reading a newspaper. In view of these statements, Applicant submits that the conclusions set forth in the Office Action are incorrect as a matter of law (See MPEP §2143.01). Therefore, Zwern does not disclose or suggest that transforming includes shifting the virtual 3D scene in a first direction of the user when the head moves 180 degrees from the first direction.

Miller discloses a 3D environment. However, Miller does not disclose or suggest changing the 3D environment based on movements of a user's head, much less shifting a virtual 3D scene in a first direction when the user's head moves from the first direction.

Accordingly, even if Zwern and Miller were combined, the resulting hypothetical combination would still fail to disclose or suggest that transforming a virtual 3D scene includes shifting the virtual 3D scene in a first direction of the user's head moves from the first direction. For at least this reason, Applicant believes that claim 1 is allowable.

Claims 11 and 21 roughly correspond to claim 1. Accordingly, claims 11 and 21 are believed to be allowable for at least the same reasons noted above with respect to claim 1. Applicants submit that all dependent claims now depend on allowable independent claims.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment

In view of the foregoing amendments and remarks, Applicant submits that the entire application is now in condition for allowance. Such action is respectfully requested at the Examiner's earliest convenience.

Applicant's attorneys may be reached by telephone listed below.

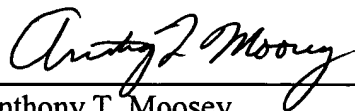
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No fee is believed to be due for this Response; however, if any fees are due, please apply such fees to Deposit Account No. 06-1050 referencing Attorney Docket 10559-538001.

Respectfully submitted,

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